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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/524,294	02/11/2005	Mitsuhiro Yuasa	101249.55938US	6396
23911 7590 06/12/2008 CROWELL & MORING LLP INTELLECTUAL PROPERTY GROUP P.O. BOX 14300 WASHINGTON, DC 20044-4300				
EXAMINER				
CAZAN, LIVIUS RADU				
ART UNIT		PAPER NUMBER		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/524,294

Applicant(s)

YUASA, MITSUHIRO

Examiner

LIVIOUS R. CAZAN

Art Unit

3729

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 March 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3-8 is/are pending in the application.
- 4a) Of the above claim(s) 5-8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 3 and 4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SE/US)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. **Claim 3** is rejected under 35 U.S.C. 102(b) as being anticipated by Genma (JP06085510; refer to the Machine Translation and the drawings in the patent).
3. Genma discloses forming (see para. [0012]) a first conductive film (2, Fig. 2(a)) on a semiconductor substrate (1); forming (see para. [0013]) a dielectric film (3a, Fig. 2(d)) on said first conductive film; etching (see Fig. 2(e); see para. [0013]) said dielectric film to be a transmission line; embedding (see para. [0014]) a first sacrificial layer (7c, Fig. 2(f)) in an area where said dielectric film has been etched away; forming (see para. [0014]) a second sacrificial layer ("resist (not shown)" in para [0014]) on said dielectric film and said first sacrificial layer; etching (patterning of the resist in para. [0014]) away said second sacrificial layer everywhere except a plurality of portions thereof; embedding (para. [0014]) a second conductive film (4, Fig. 2(g)) in an area where said second sacrificial layer has been etched away; and removing (para. [0015]) said first and second sacrificial layers by etching away said first and second sacrificial layers after embedding the second conductive film (see Fig. 2(h)).

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. **Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Genma in view of Tuckerman (US5017509).**

6. To the extent Applicant disagrees that Genma discloses forming the second sacrificial layer, etching portions thereof, and thereafter embedding the second conductive film in the areas where the sacrificial material has been etched away, Tuckerman discloses forming a conductive layer on a dielectric by this process (see Figs. 5A-5F).

7. At the time the invention was made, it would have been obvious to one of ordinary skill in the art to substitute the process of Tuckerman for the conductive film formation process of Genma because they are both equivalent methods of forming a conductive film on a dielectric. The photoresist as disclosed by Tuckerman (see Fig. 5A) corresponds to the claimed second sacrificial layer.

8. **Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Genma / Genma and Tuckerman as applied to claim 3, in view of Smith (US6611237).**

9. Genma / Genma and Tuckerman disclose(s) the same invention as the Applicant, including forming circuitry on the substrate. However, Genma / Genma and Tuckerman do(es) not disclose forming a MEMS circuit in the substrate prior to forming the first conductive film.

10. Smith discloses forming a (MEMS) circuit (ln. 53 in col. 3 to ln. 10 in col. 4, discussing making a micro switch through a MEMS process) in a substrate prior to forming an antenna (i.e. waveguide) (ln. 64 in col. 2 to ln. 1 in col. 3, discussing

integration of electronic devices directly into substrates) in order to reduce material used, reduce costs and increase performance (col. 2, lns. 61-67).

11. At the time the invention was made, it would have been obvious to one of ordinary skill in the art to have included the step of fabricating a MEMS circuit into the substrate as in Smith in the method for fabricating a waveguide of Genma / Genma and Tuckerman in order to form highly complex devices capable of performing multiple functions, thereby eliminating the need for separate devices.

Response to Arguments

12. Applicant's arguments with respect to claims 3 and 4 have been considered but are moot in view of the new ground(s) of rejection.

13. Applicant's arguments, see pages 5-7, filed 3/5/2008, with respect to the rejection under 35 U.S.C. 112, first paragraph, have been fully considered and are persuasive. The rejection has been withdrawn.

Conclusion

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LIVIUS R. CAZAN whose telephone number is (571)272-8032. The examiner can normally be reached on M-T 6:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on (571)272-4690. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/L. R. C./ 6/8/2008
Examiner, Art Unit 3729
/Peter Vo/
Supervisory Patent Examiner, Art Unit 3729